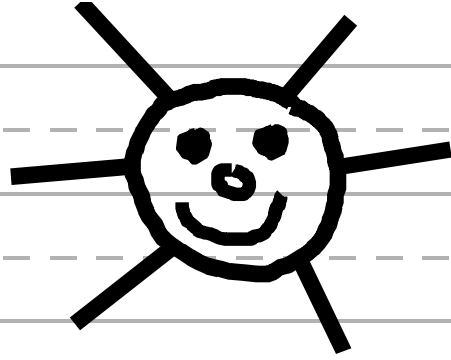


# Early Childhood Longitudinal Study



*Birth Cohort 2000*

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## **Early Childhood Longitudinal Study - Birth Cohort 2000 Project Summary**

The U.S. Department of Education, National Center for Education Statistics (NCES) in collaboration with several health, education and human services agencies is planning an ambitious new study, The Early Childhood Longitudinal Study, Birth Cohort 2000 (ECLS-B). The ECLS-B will select a national sample of children, born in the year 2000, and follow them from birth through first grade.

The National Center for Health Statistics, the National Institutes of Health (NIH), the U.S. Department of Agriculture, the Administration for Children, Youth and Families, the Office of Special Education Programs, the Maternal and Child Health Bureau (HRSA), the Office of the Assistant Secretary for Planning and Evaluation (ASPE), the Division of Nutrition and Physical Activity/Centers for Disease Control and Prevention, the Administration for Children and Families and the Office of Minority Health (OPHS) are working collaboratively with NCES on the design and implementation of this study. Sponsoring Institutes from NIH are the National Institute of Child Health and Human Development, the National Institute of Mental Health, the National Institute on Nursing Research, the National Institute on Aging and the Office of Behavioral and Social Sciences Research.

The ECLS-B is part of a longitudinal studies program comprised of two cohorts—a birth cohort and a kindergarten cohort. Together, these cohorts will provide the range and breadth of data required to more fully describe children's health, early learning, development and education experiences. The birth cohort study (ECLS-B) will focus on those characteristics of children and their families, as well as children's early health care and in-home and out-of-home experiences, that influence children's first experiences with the demands of formal school, i.e., kindergarten and first grade. It will provide important information about the way America raises, nurtures, and prepares its children for school. The kindergarten cohort study (ECLS-K) measures aspects of children's development and their environments (home and school) as they enter school for the first time and examines how these influence their academic achievement and experiences through the fifth grade<sup>1</sup>.

The provision of high-quality, equitable care and education and solutions to the problems facing the nation's parents and schools are at the top of the national agenda. Parents, educators, health practitioners and policy makers are being asked to reconsider the ways in which children are being cared for and educated throughout early childhood. With new research, such as that on early brain development, researchers and practitioners searching for answers are turning to the critical years before formal schooling as a source of information and a place to start. Children's earliest experiences and health care are essential building blocks for later development and school achievement.

As researchers and policy makers pay more attention to early childhood issues, there have been more calls for better, more detailed data both at the state and national levels. Many researchers and policy makers have pointed to the limited information available on which to base many of the complex decisions the Nation faces concerning children's care and education. The information that is available is often fragmented, difficult to access, and of unknown reliability. Current, representative, and comprehensive data are needed to study children's experiences during the critical years before compulsory school attendance.

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<sup>1</sup> This paper is focused on the ECLS birth cohort study. More information on the ECLS kindergarten cohort study is available from NCES. For the ECLS-K, base-year data were collected from a nationally representative sample of kindergartners attending public and private schools and early childhood programs in the fall of 1998.

Vital to any effort to improve the health, early care and education for all of the nation's children is a research and data collection program that increases our understanding of the dynamics that lead to differential school success. Currently no study exists that follows a national sample of U.S. children from birth through the early formative years and on to school. Most research on children's early development and education has been conducted on small, often nonrepresentative samples of specific groups of children. There are some notable exceptions, but most are not nationally representative. Furthermore, few existing databases permit the study of children's early development, health care, transitions into non-parental care and early education, as well as their early school experience by such characteristics as race-ethnicity, gender, or region. Most research tends to focus on one or two aspects of children's lives (e.g. health care and child characteristics). Studies that look at the influence of multiple domains simultaneously are sorely needed.

## **Purpose**

The ECLS-B will help to fill this gap in the existing data. Unlike previous early childhood studies, the ECLS-B will study the progression of a birth cohort through early childhood. Measures of early development will be taken prospectively, rather than retrospectively, and these measures will be more comprehensive, collecting data on all domains, including physical, cognitive, social and emotional development. In studying the whole child across these many domains, the ECLS-B will include measures on attachment, early health care and nutrition, language acquisition and cognitive and social functioning across the home, school and child care environments. The ECLS-B can be used to effectively inform policies regarding children, their families, and their health, early care and education.

The ECLS-B has two goals: descriptive and analytic. The study will provide descriptive data on (1) children's health status at birth, (2) children's experiences in the home, non-parental care, and school, and (3) children's development and growth through first grade. The study will also collect data that can be used to explore the relationships between children's developmental outcomes and their family, health care, non-parental care, school, and community. Data collected during the first year of life (around 9 months) will serve as a baseline for examining how children's home environment, health status, health care, and early child care and education shape their development. The longitudinal nature of the study will enable researchers to study children's physical, cognitive, social, and emotional growth and to relate trajectories of growth and change to variations in children's experiences.

## **Issues to be Addressed by the ECLS-B**

A vast array of issues and research questions exist pertaining to children's early care, health and education that could be studied with a national birth cohort sample. The three key areas identified by NCES to be addressed by the ECLS-B are 1) children's growth and development in critical domains; 2) children's transitions to non-parental care and early childhood education programs, kindergarten, and beyond; and 3) school readiness. These key areas are described in more detail in the following paragraphs.

**Children's Growth and Development.** The ECLS-B is especially interested in children's development during the critical years before school. A major goal of the study is to monitor children's growth and development during these years. The study seeks to better understand children's physical, social, emotional, cognitive and language development in relation to important influences in their lives.

The early experiences of children born in the 1990s most likely differ from those of children born in previous decades. For example, increasing numbers of young children have mothers in the labor force,

live in poverty, live in single-parent households, have limited proficiency in English, have poor nutrition and receive inadequate health care. These and other changes have contributed to the erosion of the economic and social capital available to children through their families and communities, which in turn impacts children's growth and developmental trajectories. Some of the specific questions the ECLS-B will address include:

- What are children's competencies and skills at different ages during the first six years of life? What are most children in the United States able to do in the domains of physical, cognitive, social-emotional and language development at key points during these first years of life?
- What are the levels and rates of cognitive growth over time for different groups of children? What characteristics of children, their families, and their non-parental care providers and early education programs are associated with different levels and rates of growth?
- Which groups of children seem to have more developmental and academic difficulties and which groups seem to have fewer of these difficulties and more accomplishments?
- What is the outlook for those children who experience early difficulties and how do family resources, early interventions, early childhood programs, health promotion and prevention programs, and school programs enhance the rates of growth and development for these vulnerable children?
- What aspects of children's health and parental health relate to children's growth and development?

**Transitions to out-of-home programs and school.** Children and adults are continually making transitions from one status to another. Of particular interest to the ECLS-B is the transition that occurs as young children go from being cared for exclusively by their parents to the care of other persons. For some children, this transition may occur shortly after birth, while for others, their first significant experience with adults other than their parents in a regular care and educational setting may be when they enter school for the first time. Other transitions include the transitions to a group-based early childhood program, the transition from preschool to school, and from kindergarten to first grade. The ECLS-B is especially interested in looking at these transitions and their impacts on different groups of children and families defined by race-ethnicity, socioeconomic status, language minority status and family structure (e.g., single-parent families and teenage mothers). Specific questions to be addressed include:

- When do children first receive regular care from someone other than their parents? What are the characteristics of this care? How do parents make choices in determining both the timing of this care and the nature of the child care arrangements?
- What effect, if any, does the types of arrangements chosen, the timing of mother's return to work and her balancing of work and home life demands have on children's growth and development, children's health status, and the family's well-being?
- Do children who receive regular care from someone other than their parents have more difficulties than children who are cared for only by their parents? Do the problems children experience vary by the type of care children receive, the timing of this care and important characteristics of children and their families?

- At what point do parents decide to place their preschool-age child in an early childhood program? What are the characteristics of the programs that children attend? What factors do parents consider in making this decision and in evaluating alternative programs?
- What are the characteristics of the early childhood programs attended by children who exhibit different levels and rates of cognitive growth? How do these program characteristics interact with characteristics of children and their families to affect children's social and cognitive development?
- What effect does participation in *different* types of early care and education programs/arrangements have on children? Are the outcomes of participation the same for different groups of children defined by race-ethnicity, SES, and other characteristics of children and their families?
- How continuous is the non-parental care and early childhood education children receive? How consistent are the characteristics of the different settings when change occurs? Do children who change care and early education programs many times experience any adverse effects not found among children who attend the same program for a continuous period?
- What are the transition patterns of children as they move from preschool (or no school) to kindergarten? For example, what percentage of children go from full-time private nursery school programs to part-day public kindergarten programs? What percentage of children go from a high quality and developmentally appropriate preschool program to a comparable kindergarten program?

**School Readiness.** Some children seem to adjust easily to their first encounter with formal schooling and are able to have a positive school experience, while other children experience problems. For most children, the first formal school experience is kindergarten. In addition, before they reach the age of compulsory school attendance, large numbers of young children experience out-of-home care/education. Kindergarten attendance is now nearly universal, and the majority of primary school children have had at least one organized group experience (i.e., day care center and/or nursery school) prior to starting first grade (West et al., 1992).<sup>2</sup> However, the nature of these early experiences in and before kindergarten is quite variable, and the demands it places on children differs across programs.

The ECLS-B will examine children's preparation for school by studying the different characteristics of children, their families, and their out-of-home care and educational experiences. The study is particularly interested in the role that parents and families play in helping prepare children for formal school and in the effects of children's participation in early care and education arrangements. However, in order to understand children's preparation for school, it is critical to understand how the educational system prepares for and responds to the diverse backgrounds and experiences that children bring with them as they enter school for the first time. Some of the questions to be addressed by the ECLS-B include:

- What early literacy, cognitive knowledge and skills, social behaviors and physical motor skills do children demonstrate as they enter formal schooling? How much variation is there in the knowledge, skills and behaviors children demonstrate as they enter school for the first time? Do the knowledge,

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<sup>2</sup> West, J., Hausken, E. G., Chandler, K., & Collins, M. (1992). *Experiences in Child Care and Early Childhood Programs of First and Second Graders*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

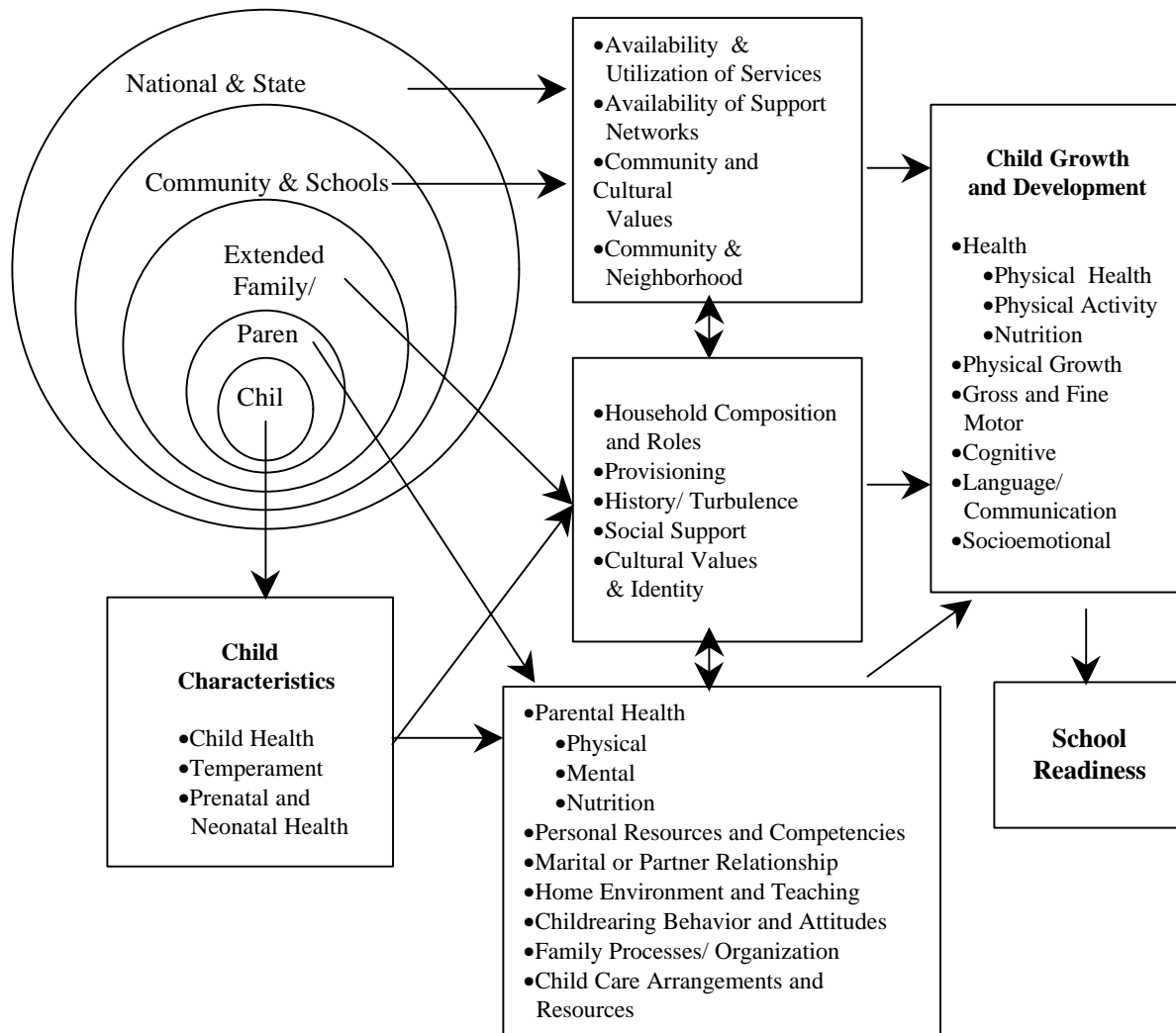
skills and behaviors children demonstrate differ by race-ethnicity, socioeconomic status, family structure, and other child and family characteristics?

- What characteristics of children, their families, out-of-home care and educational experiences during the years prior to school influence the knowledge, skills, and behaviors they demonstrate at entry to kindergarten? What characteristics of the in-home and out-of-home child-rearing environments during the first five years are most important in determining children's readiness for school?
- What role do fathers play in early child care and child-rearing and how does their involvement with their children and the family relate to children's school readiness? What role do resident and non-resident fathers play? What contributions do fathers make to children's preparedness for school that are independent of mothers' contributions?
- How are children's early health care and health status, including prenatal care and pregnancy outcomes (e.g., low birth weight and premature birth), hospitalizations, illnesses, disabilities, injuries, and access to health care related to their readiness for school?
- What actions do parents take to prepare their children for school? What is the socioeconomic and cultural variation in these actions? What is the relationship between parent behaviors and children's readiness for school?
- What is the relationship between parents' attitudes and beliefs about their children's abilities and their children's development? What is the relationship between parent beliefs about children in general and the way children learn and their own children's cognitive and social competence?
- Are those characteristics of children's early childhood care/education programs that are used to define "high quality" programs related to different dimensions of school readiness? Are the relationships the same for groups of children with different backgrounds and experiences?
- Do children with different backgrounds and experiences enter schools that are responsive to their experiences? What role do schools and preschools play in easing the transition into kindergarten? What is the relationship between the actions that schools and preschools take and a child's early experience with school?

## **Conceptual Model**

The design of the ECLS-B is based on the assumption that children's preparation for school begins at (or before) birth and continues until they enter school for the first time. It is guided by a framework of children's development, care, and schooling that emphasizes the interaction between the child, family, health care, non-parental care and education programs, and community (see figure 1). The ECLS-B recognizes the importance and inter-relatedness of factors that represent the child's health status, social/emotional and intellectual development.

Figure 1. ECLS-B Conceptual Framework



## Overview of the Study Design

Key features of the study design are outlined below. NCES and the ECLS-B contractor, Westat of Rockville, Maryland, have worked with its federal partners and private researchers to develop these and other design parameters.

**Birth Cohort Sample.** A nationally representative sample of approximately 15,000 children born during calendar year 2000 will be selected for participation in the study. The sample will consist of children from different racial-ethnic and socioeconomic backgrounds. Asian children, Pacific Islander children, moderately low birth weight children (1500-2500 grams), very low birth weight children (under 1500 grams) and twins will be oversampled. The best and most affordable way of sampling newborns is to use

birth certificates. Therefore, NCES, Westat and the National Center for Health Statistics are currently designing a sample of newborns that uses birth certificates.

**Longitudinal Design and Periodicity.** Children will be selected at birth and followed longitudinally through the end of first grade<sup>3</sup>. The first data collection will occur when the children are approximately nine months of age. Capturing data this soon after birth is important because much of the data collected at this time will pertain to prenatal care and the health care of the mother and child during the first months of life. The data collections for the rest of the study are planned for when the children reach 18 months, 30 months, and 48 months of age. Data will also be collected when the children enter kindergarten and first grade. Exhibit 1 contains the proposed data collection schedule for the full-scale study and the field test.

**Multi-factor Model.** It is imperative that the different contexts in which development and learning occur be examined in detail in order to improve our understanding of why some children adjust easily to school and appear to make critical transitions without much difficulty while others experience varying degrees of difficulty. It is also important to examine children's development across a number of critical cognitive and noncognitive domains.

The design of the ECLS-B will capture data about children's homes, communities, health care, non-parental care and early childhood programs. As children reach school age, capturing data about their schools, classrooms, and their teachers will be equally important. The ECLS-B will collect data on children's physical, social, emotional, cognitive and language development.

**Study Components.** The emphasis that is being placed on the whole child and the different environments in which development and learning occur is critically important for the design of the ECLS-B. While children's parents will be the primary reporters throughout the life of the study, at varying points, it will be necessary to gather data from children's birth records, their care and early education providers, their schools and teachers, and directly from the children themselves.

- Children's **birth certificates** capture a variety of useful data about the children and about their mothers and families. Birth certificates provide information on the date of birth and children's gender. Information is also available on parents' education, parents' race and ethnicity (including Hispanic origin) and mother's marital status. Birth certificates provide information on mother's pregnancy history, prenatal care, medical and other risk factors during this pregnancy and complications during labor and birth. Health characteristics of children, such as congenital anomalies and abnormal conditions of the baby and the baby's APGAR score, are also provided.
- A **parent/guardian** interview will be conducted in the child's home at each data collection point. The parent/guardian interviews will capture information about children's early health and development and about their experiences with family members and others. Parents/guardians will also provide key information about themselves as caregivers, the home environment and the neighborhood in which they live. The parent/guardian interviewed will be the individual who is the primary caregiver and the most knowledgeable about the care and education of the child. In most cases, this will be the child's mother or female guardian.

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<sup>3</sup> Ideally the sample would be followed well beyond first grade. Whether or not this is feasible and affordable will be evaluated over the life of the study.



- **Children's** participation in the study will only occur when it is appropriate for their age-level and with the full permission of their parents/guardians. Beginning at 9 months, children will participate in activities designed to measure important developmental skills in the cognitive, social, emotional, and physical domains. The ECLS-B will be using the Bayley Scales for Infant Development (BSID-II) and the Behavior Rating Scale (BRS) from the Bayley. These measures will allow children's gross and fine motor skills as well as their receptive and expressive language skills and emotion regulation to be assessed. The Nursing Child Assessment Teaching Scale (NCATS) from the Nursing Child Assessment Satellite Training (NCAST) assesses the parent-child interaction for early precursors of cognitive and social skills. At the nine-month home visit children's height, weight, and middle upper arm circumference will also be assessed. The same measures will be conducted at eighteen-months with the addition of a measure of attachment.
- With the permission of the child's parents, individuals and organizations who provide regular care for a child will be interviewed. **Care providers and preschool teachers**, like parents, represent a significant source of information on themselves (their backgrounds, teaching practices, and experience), the children in their care, and children's learning environments. An estimated 45 percent of children under age 1 receive some type of care and education on a regular basis from a non-parental provider, primarily in a home environment; by age 4, the proportion of children receiving non-parental care increases to 78 percent, most in center-based programs<sup>4</sup>. Much of the data needed to describe the structure of children's care arrangements and education programs, to develop indicators of the quality of these arrangements and programs, and to profile the background and experience of the persons caring for these children can only be reported accurately by the care providers, teachers, and organizations themselves. Contacting children's care and education providers also opens up other data collection opportunities (e.g., collecting information about children's development from sources other than their parents). This information will be collected when the children are 18 months of age and again at 30- or 48-months.
- Once the children enter formal schooling, **school administrators and teachers** will provide information on the physical and organizational characteristics of their schools and on the schools' learning environments, educational philosophies, and programs. As the ECLS-B cohort enters kindergarten and the first grade, their school teachers will become valuable sources of information on one of children's most immediate learning environments, the classroom. Teachers also represent important potential sources of information about children's development, both cognitive and social.
- **Resident fathers** will complete a self-administered questionnaire reviewing the particular role fathers play in the development of their children. The father questionnaire will capture information about children's well-being and activities fathers engage in with their children. Fathers will also provide key information about themselves as caregivers. Then data will provide the opportunity to gather information on fathers from the fathers themselves. This information will be collected when the children are 9 months old and at least two additional times during the study. Currently, NCES is exploring the possibility of including nonresident fathers as well.

## Data Availability

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<sup>4</sup> U. S. Department of Education, National Center for Educational Statistics, 1995 National Household Education Survey.

NCES will release data from the ECLS-B for the first time in Spring 2002. The first release will include the 9-month (1) parent interview data, (2) child assessment data and (3) father questionnaire data. NCES will release data on subsequent waves approximately one year after data collection ends.

Exhibit 1. ECLS Birth Cohort Data Collection Schedule

Project Activity	Calendar Year								
	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Field Test</b>									
Base-Year (9 mo. old)									
First Follow-up (18 mo. old)									
Second Follow-up (30 mo. old)									
Third Follow-up (48 mo. old)									
Fourth Follow-up (Kindergarten)									
Fifth Follow-up (1 <sup>st</sup> Grade)									
<b>Full Scale Collection</b>									
Base-Year (9 mo. old)									
First Follow-up (18 mo. old)									
Second Follow-up (30 mo. old)									
Third Follow-up (48 mo. old)									
Fourth Follow-up (Kindergarten) <sup>1</sup>									
Fifth Follow-up (1 <sup>st</sup> Grade) <sup>2</sup>									

<sup>1</sup> This collection is scheduled for the fall of the children's kindergarten year. Because of age requirements for school entry, the majority of children sampled in this study will be entering kindergarten in two different years.

<sup>2</sup> This collection is scheduled for the fall of the children's first grade year. Because of age requirements for school entry, the majority of children sampled in this study will be entering first grade in two different years.